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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/621,943	07/24/2000	Hisashi Ohtani	07977/227002/US3559D1	5256

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EXAMINER

BROPHY, JAMIE LYNN

ART UNIT

PAPER NUMBER

2822

DATE MAILED: 11/19/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/621,943

Applicant(s)

OHTANI, HISASHI

Examiner

J. L. Brophy

Art Unit

2822

-- The MAILING DATE of this communication appears on the cover sheet with the corresponding address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 August 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) 14-19 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 and 20-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 July 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☒ Certified copies of the priority documents have been received in Application No. 09/026,888.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 6.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

This office action is in response to the amendments filed 4/25/02 and 8/28/02.

Election/Restrictions

Applicant's election without traverse of Group 1, claims 1-13 in Paper No. 7 is acknowledged.

Claims 14-19 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim. Election was made **without** traverse in Paper No. 7.

Currently, claims 20-23 are generic.

Drawings

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: reference number 315 is missing from Fig. 3G (p. 10, lines 5-6). Please include reference number 315 in Fig. 3G for clarity. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-13 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. In claims 1, 4, and 6, the limitation of "applying water repellence of the semiconductor film to the solution" is not adequately described in the specification. The specification teaches that "the selective holding of said metal elements is conducted by using water repellency of the silicon film to said solution" (p. 3, lines 23-25) and that "the solution as coated is repelled by the surface of the amorphous silicon film" (p. 5, lines 14-15). However, the specification does not provide support for the limitation of "applying" the water repellence of the semiconductor film.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claims 1, 4 and 6, the limitation of "applying water repellence of the semiconductor film to the solution" is unclear. How is the water repellence characteristic of the film *applied* to the solution? Is there an additive in the solution that causes said water repellence?

Please note that dependent claims are rejected because the claim from which they depend has been rejected.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1, 4 and 6 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 6, 12 and 17 of U.S. Patent No. 6,093,587 in view of Makita et al (6,013,544).

Claims 6, 12 and 17 of U.S. Patent No. 6,093,587 recite all of the elements of claims 1, 4 and 6, respectively, of the present application. However, claims 6, 12 and 17 of U.S. Patent No. 6,093,587 do not specifically teach that the semiconductor device is an EL display device.

Makita et al teach a method for crystallizing an amorphous silicon layer using a catalyst heat treatment that can be applied to an EL display device (col. 19, lines 54-60).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the method taught by U.S. Patent No. 6,093,587 by

applying the crystallization method to an EL display device in order to increase performance characteristics such as response and resolution.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 20-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakajima et al (5,712,191) in view of King et al ("Polycrystalline Silicon-Germanium Thin-Film Transistors", cited by applicant) and Makita et al.

Nakajima et al teach a method that comprises forming an amorphous semiconductor film 303 on an insulating surface 302;

Applying a crystallization promoting material 304, 101 comprising a metal to a selected portion of the amorphous semiconductor film; and

Crystallizing the amorphous semiconductor film 303 provided with said crystallization promoting material 101 by heating,

Wherein the crystallization promoting material 304 is applied by applying a solution containing said metal therein (col. 8, lines 23-25) and

Wherein the metal is at least one selected from the group consisting of Fe, Co, Ni, Ru, Rh, Pd, Os, Ir, Pt, Cu and Au (col. 3, lines 36-38).

See Figs. 3A to 3E and accompanying text,

However, Nakajima et al do not specifically teach that the method is used for manufacturing an EL display device. In addition, Nakajima et al do not specifically teach that the amorphous semiconductor film comprises $\text{Si}_x\text{Ge}_{1-x}$.

King et al teach using crystallized amorphous $\text{Si}_x\text{Ge}_{1-x}$ in manufacturing TFTs.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the method disclosed by Nakajima et al by using amorphous $\text{Si}_x\text{Ge}_{1-x}$ in place of amorphous silicon in order to lower the thermal budget used during fabrication of the TFT (see King et al, first page, col. 1).

Makita et al teach a method for crystallizing an amorphous silicon layer using a catalyst heat treatment in manufacturing a TFT that can be used in an EL display device (col. 19, lines 54-60).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the method taught by Nakajima et al by using the TFT taught by Nakajima et al in an EL display device because the TFT taught by Nakajima et al has a high withstand voltage and is capable of operating a large current (see Nakajima et al, col. 3, lines 1-11).

Response to Arguments

Applicant's arguments filed 4/25/02 have been fully considered but they are not persuasive.

Regarding the rejection of claims 1-13 under 35 U.S.C. 112, applicant argues that the step of "applying water repellency" is supported by the specification and points

out several passages from the specification that mention the water repellency of the amorphous layer to the solution. However, none of the examples pointed out by applicant describe the step of "applying" the water repellency. The water repellency characteristic is utilized in the method taught by the present specification. The dispute lies in the use of the term "applying". The specification does not teach "applying" the water repellency, nor does the specification teach any positive step involved in said "applying" process. Therefore, applicant's arguments are not found persuasive because it is still unclear how the water repellency is applied to the solution.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to J. L. Brophy whose telephone number is (703) 308-6182. The examiner can normally be reached on M-F (8:00-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amir Zarabian can be reached on (703) 308-4905. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9318 for regular communications and (703) 872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

J.L.B.

jlb.

November 13, 2002


AMIR ZARABIAN
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